



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/866,092	05/23/2001	Mark Thomas McCormack	6136/54242 (25916-217)	5484

7590 12/17/2002  
COUDERT BROTHERS  
600 Beach Street  
San Francisco, CA 94109

EXAMINER

LEE, EUGENE

ART UNIT	PAPER NUMBER
----------	--------------

2815

DATE MAILED: 12/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/866,092

Applicant(s)

MCCORMACK ET AL.

Examiner

Eugene Lee

Art Unit

2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 1-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 17-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 May 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

Art Unit: 2815

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election without traverse of Group I (claims 17-34) in Paper No. 8 is acknowledged.
2. Claims 1-16 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 8.

### *Drawings*

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore,
  - a. said circuit board substrate comprises a multi-layer core substrate (claim 19);
  - b. the exposed portion of said second substrate surface includes a cavity (claim 25);
  - c. second integrated electronic component disposed in said cavity (claim 26);
  - d. at least one first pad disposed on said first integrated electronic component and **contacting** said metallic layer (claims 27-29);

must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Claim Objections***

4. Claims 17 thru 34 are objected to because of the following informalities: in claim 17, line 5, the word "least" is misspelled. Appropriate correction is required.

Also, in claim 17, it is unclear whether the "second dielectric layer" is referring to element 32 or element 60. It appears that the applicant is referring to element 60, however, on page 5, lines 8-11, applicant refers to the "second dielectric layer" as element 32. Appropriate clarification and correction is required.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 27-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear how "at least one first pad" can contact "said metallic layer." From the Fig 9, first pad 26 does not contact said metallic layer 40. Please note that opening metal lining 72 is not said metallic layer 40.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 2815

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

8. Claim 17 is rejected under 35 U.S.C. 102(b) as being rejected by McClanahan et al. '397.

McClanahan discloses (see, for example, FIG. 1) a multilayer circuit structure comprising layer (circuit board substrate) L6, metallization (integrated electronic component) 17, layer (first dielectric layer) L5, metallic layer 17, vias fills (via) 19, layer (second dielectric layer) L4 and via fills (opening) 19.

Regarding the metallization being construed as an integrated electronic component, see column 4, lines 48-53, wherein McClanahan states that the metallizations may be electronic components, i.e. resistors, inductors, capacitors.

9. Claims 17 thru 34 are rejected under 35 U.S.C. 102(e) as being anticipated by Swarup '154 B1. Swarup discloses (see, for example, FIG. 6B) a multilayer circuit structure comprising first substrate (circuit board substrate) 192, capacitor (first integrated electronic component) 38, second substrate (first dielectric layer) 204, dielectric bridge (metallic layer) 174, via hole (at least one via and opening) 160, third substrate (second dielectric layer) 208. Regarding claim 27, see column 11, lines 1-5. Regarding claim 30, see, for example, column 12, lines 18-21.

10. Claims 17, 27, 30, 33, and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Cole, Jr. et al. '589. Cole, Jr. discloses (see, for example, FIG. 5) a high density interconnect structure comprising a substrate (circuit board substrate) 12, chip (integrated electronic

Art Unit: 2815

component) 16, layer (first dielectric layer) 26, metallization layer (metallic layer) 28, via hole (one via) 23, layer (second dielectric layer) 36, and via hole (opening) 33.

### INFORMATION ON HOW TO CONTACT THE USPTO

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eugene Lee whose telephone number is 703-305-5695. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on 703-308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Eugene Lee  
December 12, 2002



EDDIE LEE  
SUPERVISOR, PATENT EXAMINER  
TECHNOLOGY CENTER IN 2000